

REMARKS

Further consideration of the application is respectfully requested in view of the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Claim Rejections – 35 USC § 102

Claims 1, 5 and 6 were rejected under 35 U.S.C. §102(b) as being anticipated by McKeown et al., *Towards Multidocument Summarization by Reformation: Progress and Prospects*, 1999 ("McKeown-1").

Regarding Claim 1:

The Applicant responds that claim 1, as amended has at least one limitation not disclosed by McKeown-1, specifically:

- selecting paragraphs from the documents through a subsuming relation
- calculation including,
- creating a link from terms in each paragraph to identical terms in
  - substantially all of the other paragraphs, wherein terms include noun phrases, verb phrases or entity names,
- counting for each paragraph the number of links from terms in the paragraph to terms in other paragraphs,
- denoting for each paragraph the number of links counted for that paragraph as the significant score of that paragraph,
- ranking the paragraphs by the significant score,
- selecting paragraphs based on ranking;

McKeown-1 discloses a method for selecting a group of text units (paragraphs) to be summarized by extracting linguistic features from the paragraphs; constructing a vector for each pair of paragraphs, the vector representing the matching features of the pair; determining the degree of similarity between each pair of paragraphs; using a clustering algorithm to place the paragraphs into groups, each group with similar paragraphs; selecting each group in turn for summarization. Pg. 455, Col. 1. The features include noun phrases. Pg. 455, Col. 2. Determining the degree of similarity between each

pair of paragraphs includes measuring the angle between the vectors of each paragraph pair, the smaller the angle, the more similar the paragraphs in the pair. Pg. 456, Col. 1.

The McKeown-1 method, in its process of constructing a vector of the similar features for each possible pair of paragraphs, will inherently find for each feature in each paragraph all matching features in other paragraphs. However, the McKeown-1 method does not expressly or inherently count for each paragraph matching features in substantially all of the other paragraphs, much less use that count to rank and then select paragraphs. Thus the complex McKeown-1 method is not merely the method of claim 1 with additional aspects, but a fundamentally different method. The McKeown-1 method aims at reducing the length and repetitiveness of summaries, but is complex. The method of claim one is simpler and much faster due to the avoidance of vector math calculations. Application Pg. 6, ln 18-22.

Furthermore, claim 1 as amended has another limitation not disclosed by McKeown-1: "aggregating the selected paragraphs into a summary."

McKeown-1 discloses a method of multiple document summarizing including breaking the documents into paragraph sized text units; identifying matching features between pairs of text units; creating groups of similar text units; selecting a group of text units to be summarized; then summarizing the selected group of text units. McKeown-1 discloses a method for summarizing a selected group of text units by selecting a representative sentence from one of the text units in the selected group or "theme." McKeown-1 discloses summarizing a theme in a sentence by a three step process of (1) identifying phrases in the theme that are close to other phrases in other text units of the theme and identifying predicate-argument structures for each sentence; (2) determining which phrases and structures should be combined into a single more complex sentence; (3) mapping the phrases into the composite structure. Pg. 455, Col. 1. However, the multiple document summarizing method disclosed in McKeown-1 does not include a stage of aggregating selected paragraphs into a summary.

For at least these reasons, the Applicant believes that claim 1 is not anticipated by McKeown-1.

Regarding Claims 5, 6:

Claims 5 and 6 are dependent on claim 1. The Applicant believes they are not anticipated by McKeown-1 for at least the same reasons as the Applicant gave regarding claim 1.

Claim Rejections – 35 USC § 103 – McKeown-1 / McKeown-2 / Ueda

The Examiner rejected Claim 2 under 35 U.S.C. §103(a) as being unpatentable over McKeown-1 in view of McKeown et al., U.S. Patent 6,473,730 (“McKeown-2”) and further in view of Ueda, U.S. Patent 6,493,663. The Examiner found that McKeown-1 disclosed the limitations of claim 1, upon which claim 2 depends, and that the limitations added by claim 2 were not disclosed by McKeown-1, but by McKeown-2 and Ueda.

Regarding Claim 2:

The Applicant traverses this rejection on the grounds that not all limitations of claim 2 are disclosed by the cited references. To establish a *prima facie* case of obviousness, the cited references must disclose all limitations of a claim in question. MPEP §2143.03. Claim 2 includes all the limitations of claim 1. McKeown-1 does not disclose all the limitations of claim 1 as amended, because the method of McKeown-1 does not count for each paragraph matching features in substantially all of the other paragraphs, and does not use such a count to rank and then select paragraphs, as the Applicant argues in detail in the section regarding the §102 rejection of claim 1. McKeown-2 and Ueda do not correct this defect. These limitations are not disclosed by McKeown-2 and Ueda as McKeown-2 ranks and selects by segment, and Ueda by sentence, not by paragraph.

As the Applicant pointed out in the Applicant’s response to the Office Action mailed June 23, 2006, Ueda discloses a method for creating a summary of a group of documents that includes analyzing the syntax of the sentences in the documents, generating a graph for each sentence describing the relational dependencies between words, scoring each graph, combining graphs with the same concept, and synthesizing summarizing sentences from graphs with higher scores. Col. 3, line 59 – col. 4, line 13. Several methods for scoring a graph are disclosed. Some methods for scoring simply count the number of elements (nouns and verbs) in a graph (or “tree”) while others include factors for weighing each element including: the importance of the element, the

dependency of the element to other elements, and the structure of the sentence. Col. 5, lines 56-60; Col. 7, lines 14-24; Col. 9, lines 1-6, 28-31; Col. 10, line 66 – col. 11, line 11-39. Some methods of calculating element (“word”) importance include the frequency the element is used in the documents multiplied by inverse document frequency. Col. 11, lines 7-11; col. 12, lines 56-57.

As the Applicant pointed out in the Applicant’s response to the Office Action mailed June 23, 2006, McKeown-2 discloses a method for topical segmentation of a document that includes linking occurrences of similar terms, assigning weighted scores to paragraphs corresponding to the linked occurrences, where the weighting is based on the type, and position of each linked occurrence. Col. 2, lines 40-45. The weighted scores are then used, not to rank the paragraphs, but to define topical segment boundaries, which contain one or more paragraphs. Col. 7, lines 43-62. The segments are then ranked based on segment significance, which includes segment importance and segment coverage. Col. 8, lines 24-32. Segment importance is based on calculating for each term that appears in the segment, the number of times the term appears in the document multiplied by the number of segments it appears in. Col. 8, lines 32-67. Segment coverage is based on the number of links partially or fully contained within the segment in comparison with the other segments. Col. 9, lines 1-40.

For at least this reason, the Applicant believes this rejection of claim 2 has been overcome.

Claim Rejections – 35 USC § 103 – McKeown-1 / McKeown-2

The Examiner rejected Claim 4 under 35 U.S.C. §103(a) as being unpatentable over McKeown-1 in view of McKeown-2. The Examiner found that McKeown-1 disclosed the limitations of claim 1, upon which claim 4 depends, and that the limitations added by claim 4 were not disclosed by McKeown-1, but by McKeown-2.

Regarding Claim 4:

The Applicant traverses this rejection on the grounds that not all limitations of claim 4 are disclosed by the cited references. McKeown-1 does not disclose all the limitations of claim 1 as amended and McKeown-2 does not correct this defect, as the Applicant argues in detail regarding the §103 rejection of claim 2.

For at least this reason, the Applicant believes this rejection of claim 4 has been overcome.

Claim Rejections – 35 USC § 103 – McKeown-1 / Ueda

The Examiner rejected Claims 7, 11-13 and 17-18 under 35 U.S.C. 103(a) as being unpatentable over McKeown-1 in view of Ueda.

Regarding Claim 7, 13:

Claim 7 claims a medium with instructions that cause a machine to perform the method of claim 1. Claim 13 claims a system with a processor and a unit that performs the method of claim 1. The Examiner found that McKeown-1 disclosed the limitations of claim 1. The Examiner found that McKeown-1 did not disclose implementation of the method of claim 1 on a machine-readable medium or associated processing elements, but found these limitations are disclosed by Ueda.

The Applicant traverses this rejection on the grounds that not all limitations of claim 1 as amended are disclosed by McKeown-1 as the Applicant argues in detail regarding the §102 rejection of claim 1. Ueda does not correct this defect, as the Applicant argues in detail regarding the §103 rejection of claim 2.

For at least this reason, the Applicant believes this rejection of claims 7, 13 have been overcome.

Regarding Claims 11, 12, 17, 18:

The Examiner found that McKeown-1 in view of Ueda disclosed the limitations of claim 7, 13, upon which claims 11, 12, 17, 18 respectively depend, and that the limitations added by claims 11, 17 were disclosed by McKeown-1.

The Applicant traverses this rejection on the grounds that not all limitations of claims 11, 12, 17, 18 are disclosed by the cited references. McKeown-1 and Ueda do not disclose all the limitations of claims 7, 13, as argued by the Applicant above regarding the §103 rejection of claims 7, 13.

For at least these reasons, the Applicant believes this rejection of claims 11, 12, 17, 18 have been overcome.

Claim Rejections – 35 USC § 103 – McKeown-1 / Ueda / McKeown-2

The Examiner rejected Claims 8, 10, 14 and 16 under 35 U.S.C. §103(a) as being unpatentable over McKeown-1 in view of Ueda and further in view of McKeown-2.

Regarding Claims 8, 10, 14, 16:

The Examiner found that McKeown-1 in view of Ueda disclosed the limitations of claim 7, 13, upon which claims 8, 10, 14, 16 respectively depend, and that the limitations added by claims 11, 17 were not disclosed by McKeown-1 in view of Ueda, but by McKeown-2.

The Applicant traverses this rejection on the grounds that not all limitations of claims 8, 10, 14, 16 are disclosed by the cited references. McKeown-1 and Ueda do not disclose all the limitations of claims 7, 13, as argued by the Applicant above regarding the §103 rejection of claims 7, 13. McKeown-2 does not cure this defect, as the Applicant argued regarding the §103 rejection of claim 2.

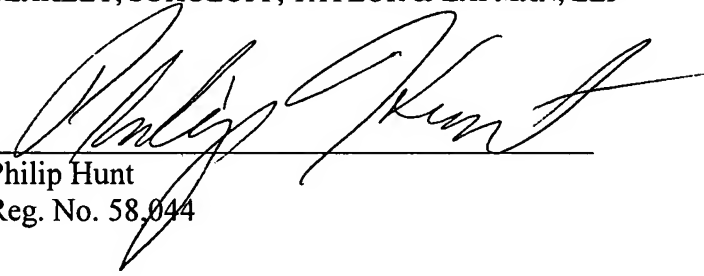
For at least these reasons, the Applicant believes this rejection of claims 8, 10, 14, 16 have been overcome.

**CONCLUSION**

Applicant respectfully submits the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Phil Hunt at (503) 439-6073. Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,  
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